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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|------------------------------|-------------|----------------------|---------------------|------------------|
| 10/776,074 | 02/11/2004 | Afshin Momtaz | 51463/SDB/B600 | 2103 |
| 23363 | 7590 | 02/24/2005 | EXAMINER | |
| CHRISTIE, PARKER & HALE, LLP | | | COX, CASSANDRA F | |
| PO BOX 7068 | | | ART UNIT | PAPER NUMBER |
| PASADENA, CA 91109-7068 | | | 2816 | |

DATE MAILED: 02/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/776,074

Applicant(s)

MOMTAZ, AFSHIN

Examiner

Cassandra Cox

Art Unit

2816

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,5,8,10-12,15,16 and 19-21 is/are rejected.
- 7) ☒ Claim(s) 3,6,7,9,13,14,17,18,22 and 23 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Drawings

1. Figures 1-4 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.
2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the phase rotator (and delay circuit), coupled to receive the at least one filtered signal and the second signal... must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate

changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-2, 4-5, 8, 10-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Popescu (U.S. Patent No. 5,432,480).

In reference to claim 1 Popescu discloses in Figure 1 phase detector comprising: a first flip flop (112) comprising: a data input coupled to a first signal (DIN) having a first frequency, and a clock input coupled to a second signal (CLK) having a second frequency, wherein the first frequency is a multiple of the second frequency (see Figure 2); and a second flip flop (113) comprising: a data input coupled to the output of the first flip flop (112), and a clock input coupled to the second signal (CLK). The same applies to claims 5, 8, and 10-11, wherein the high speed latch and the low speed latch are

seen to be equivalent to master and slave latches, respectively, and flip-flops containing master and slave latches are well known in the art, of which fact official notice is taken.

In reference to claim 2, Popescu discloses in Figure 1 wherein the first flip flop (112) is a high speed flip flop.

In reference to claim 4, Popescu discloses in Figure 1 wherein the second flip flop (113) is a low speed flip flop.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 12, 15-16, and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim (U.S. Patent No. 6,388,485) in view of Popescu (U.S. Patent No. 5,432,480).

In reference to claim 15, Kim discloses in Figure 3 a delay lock loop comprising: phase detector; digital filter (342), coupled to receive the at least one phase error signal (DS through controller 324), that generates at least one filtered signal (DCON2); and a phase rotator (344), coupled to receive the at least one filtered signal (DCON2) and the second signal (ECLK), that delays the second signal according to the at least one filtered signal (DCON2). Kim does not disclose that the phase detector comprises a first and second flip-flop. Popescu discloses in Figure 1 phase detector comprising: a first flip flop (112) comprising: a data input coupled to a first signal (DIN) having a first

frequency, and a clock input coupled to a second signal (CLK) having a second frequency, wherein the first frequency is a multiple of the second frequency (see Figure 2); and a second flip flop (113) comprising: a data input coupled to the output of the first flip flop (112), and a clock input coupled to the second signal (CLK). It would have been obvious to one skilled in the art at the time of the invention that the phase detector of Popescu could be used in the circuit of Kim as the phase detector for the advantage of being able to decrease design time by using a well known design for a phase detector. The same applies to claim 19, wherein Kim discloses in column 5, lines 49-50 (with reference to Figure 5) that the delay controller is implemented as a charge pump and the loop filter is seen to be element 542. The same also applies to claim 12, wherein all the limitations of the base claim and any intervening claims are met by Popescu as mentioned above with reference to claim 10.

In reference to claim 20 the delay circuit (544) comprises at least one delay line.

In reference to claim 15, Popescu discloses in Figure 1 the first flip flop, wherein the high speed latch and the low speed latch are seen to be equivalent to master and slave latches, respectively, and flip-flops containing master and slave latches are well known in the art, of which fact official notice is taken. The same applies to claim 21.

Allowable Subject Matter

7. Claims 3, 6-7, 9, 13-14, 17-18, and 22-23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

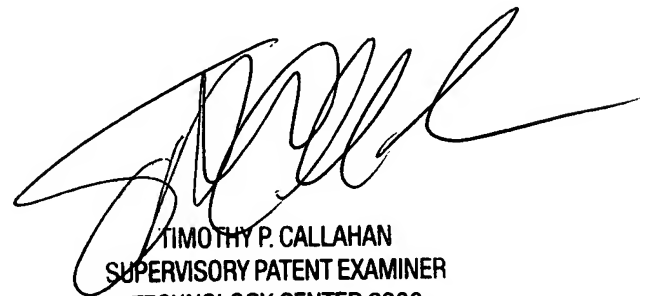
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cassandra Cox whose telephone number is 571-272-1741. The examiner can normally be reached on Monday-Thursday from 7:00 AM to 4:30 PM and on alternate Fridays from 7:00 AM to 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Callahan can be reached on 571-272-1740. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CC

February 19, 2005



TIMOTHY P. CALLAHAN
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